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THE
O.S. LONGMAN
LABORATORY BUILDING

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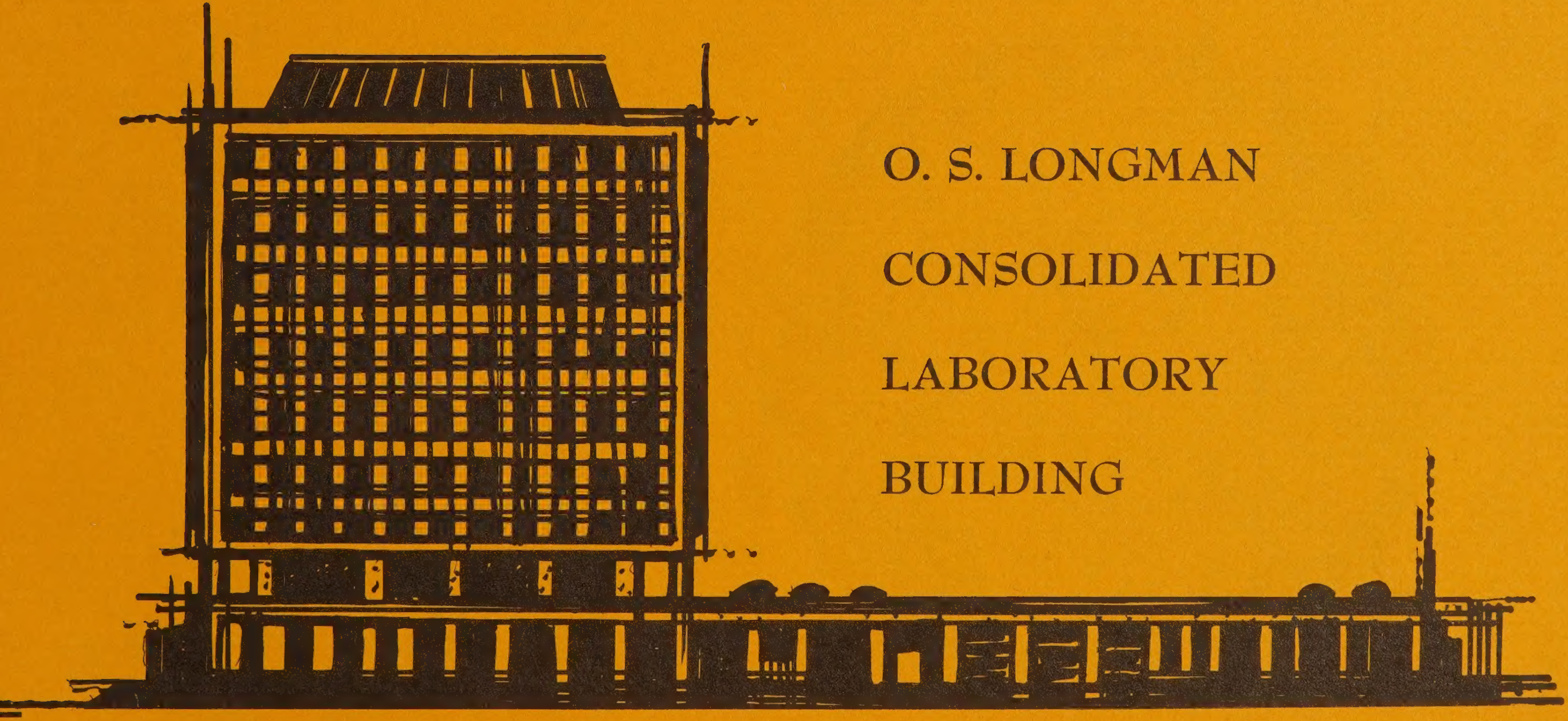


O. S. LONGMAN CONSOLIDATED LABORATORY BUILDING

PROVIDING LAB SERVICE FOR THE DEPARTMENT OF AGRICULTURE AND LANDS AND FORESTS

O. S. LONGMAN—B.S.A., LL.D., O.B.E.
1889-1966

Born near Carnduff, Saskatchewan, then the Northwest Territory. He joined the Alberta Department of Agriculture in 1913, serving with the Schools of Agriculture at Claresholm, Raymond and Olds. He was strongly identified with and actively supported the development of irrigation in Alberta. Was named Field Crops Commissioner in 1934 and served as Deputy Minister from 1942-1955.

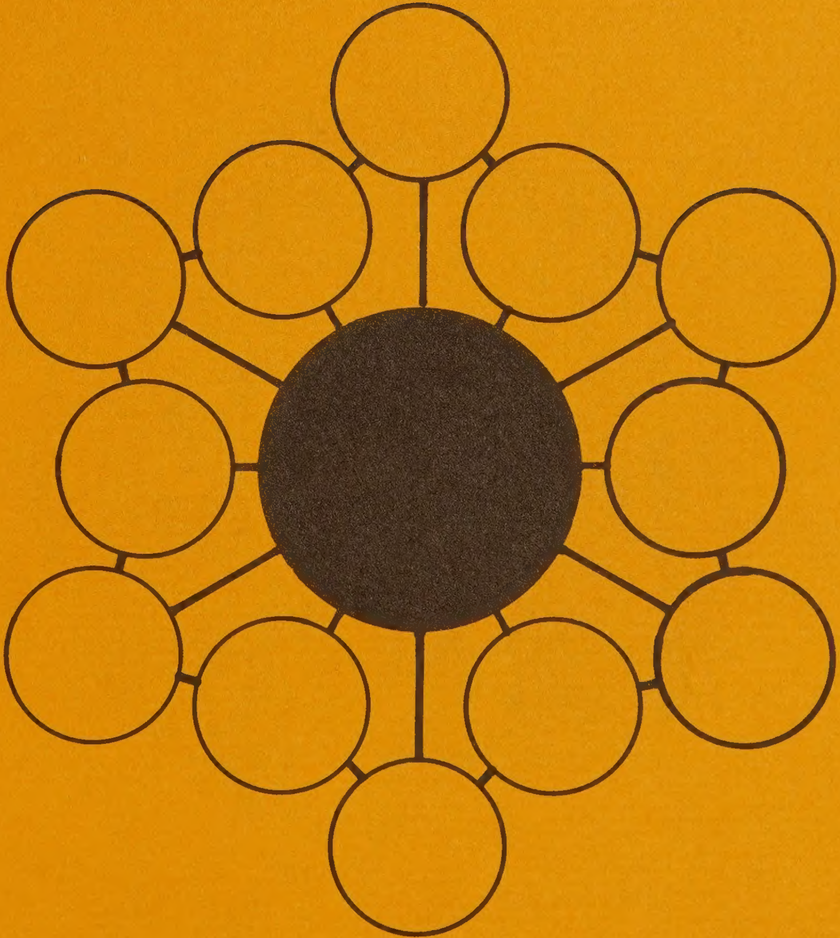
He participated in the development of western agriculture and knew the problems of the farmer from homesteading and drought to the complexities of large scale modern business.

He recognized the need for knowledge and modern techniques. His initiative made science and service laboratories an integral part of the agricultural public service of Alberta.

This building was named in his honor in recognition of his foresight, wisdom and endeavours in the interests of agriculture.

THE O. S. LONGMAN BUILDING

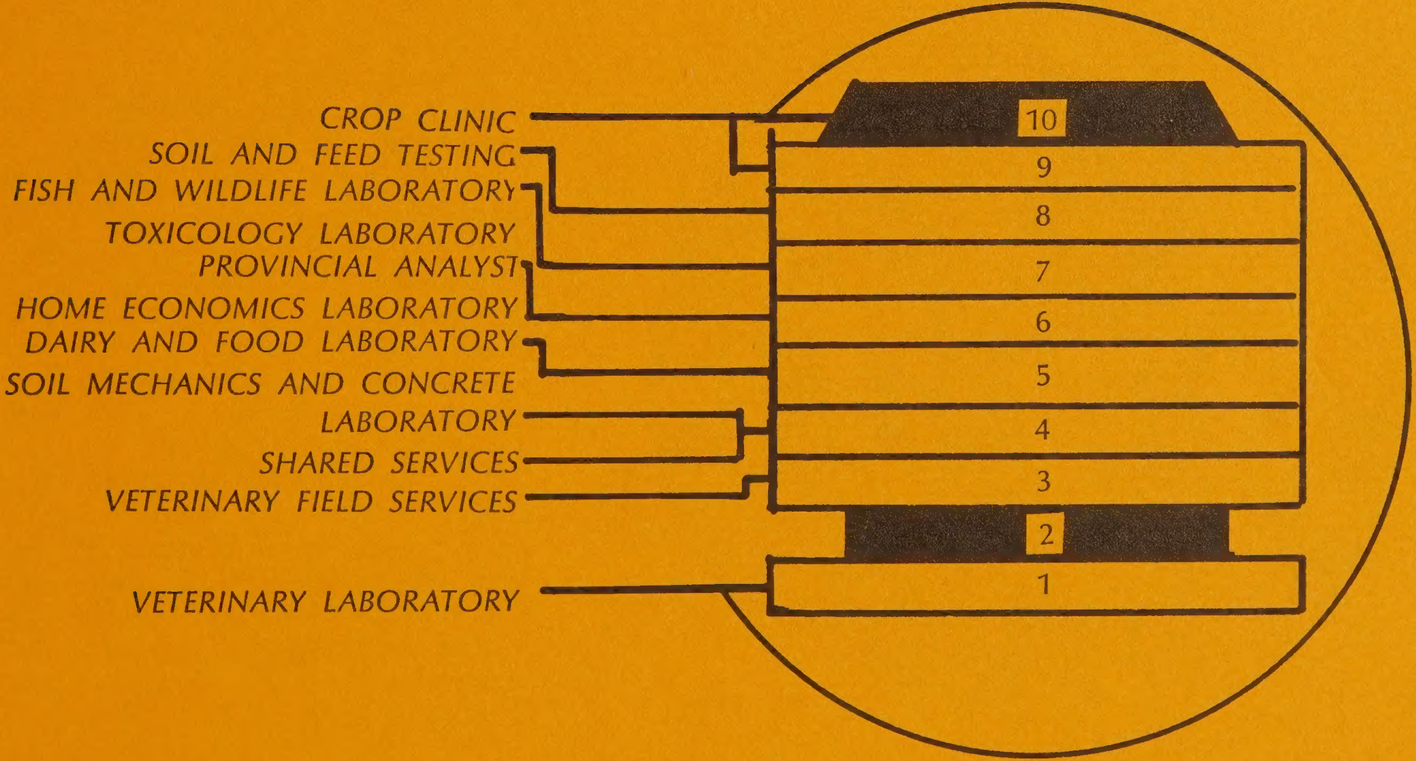
The merits of a consolidated laboratory building were first discussed formally in 1962. With our rapidly expanding technology, it was agreed that improved and expanded scientific laboratory services were required to provide the scientific facts necessary for formulating, evaluating and improving government policies for agriculture and wildlife. Such facilities were also needed for government to continue its investigational and administrative duties to ensure the consumer received a safe and wholesome food supply. A committee that was established to look at the government's long range needs for laboratory facilities noted that consolidation of services offered considerable advantage over several individual units. Several laboratories needed to expand about that time and consolidating them would avoid duplication of costly equipment, staff and so on. A number of services like libraries and wash-up facilities could be shared in one building. Professional staff with various backgrounds could share and exchange technical knowledge that would help them serve the public better.



SOME FACTS ABOUT THE BUILDING

A laboratory building requires easy access to special services such as distilled water, vacuum lines, steam lines etc. and maximum flexibility. Access to these services is provided in this building by carrying the mechanical services to each floor in vertical pipe chases which are located at 10-foot intervals on the outside walls. This has resulted in a very complex system of over 30 miles of pipe and ducts. The work benches connect directly to these services at the outside wall, reducing costly connections through cement floor slabs or ceilings.

For safety and odor control, the air conditioning system uses outside air exclusively. Air and water pollution from danger areas in the laboratory is avoided by using air furnaces, ultra violet irradiation and by boiling the sewage. The incinerator stacks are carried to the top of the building so that what little smoke is left after the high temperature incineration is released at a height of over 150 feet.


CROP CLINIC
SOIL AND FEED TESTING
FISH AND WILDLIFE LABORATORY
TOXICOLOGY LABORATORY
PROVINCIAL ANALYST
HOME ECONOMICS LABORATORY
DAIRY AND FOOD LABORATORY
SOIL MECHANICS AND CONCRETE LABORATORY
SHARED SERVICES
VETERINARY FIELD SERVICES
VETERINARY LABORATORY
10
9
8
7
6
5
4
3
2
1

VETERINARY LABORATORY

Annual losses of livestock through disease are estimated at well over fifty million dollars. Effective control and treatment of these diseases hinges on accurate diagnosis. The veterinary laboratory provides a diagnostic service based on laboratory procedures not available in local veterinary clinics and hospitals. It takes special equipment and facilities and people with special training in subjects like virology, bacteriology and pathology to provide this service.

Domestic animals and birds, wildlife and zoo speciments are received from all over Alberta. Pathologists dissect the specimens and examine the various tissues for disease producing bacteria, viruses and chemical agents. Thousands of serious disease situations have been nipped in the bud because of early diagnosis by this laboratory.

DAIRY HERD IMPROVEMENT LABORATORY

This is one of the service laboratories used to support the dairy herd improvement program. A Milkotester is used to determine the butterfat content of the individual milk samples submitted by participating dairymen on each cow in the herd. Production records provide the dairymen with the information necessary in making efficient management decisions.

A minimum of 75,000 milk samples will be tested in this laboratory this year. This could exceed 100,000 samples in the first complete year of operation.

VETERINARY FIELD SERVICES

The Veterinary Field Service is separate from, but operates in close co-operation with, the Laboratory Service and veterinary practitioners. Its primary function is to conduct animal health programs and to prevent the spread of disease. Surveys and investigations of disease are also conducted as an aid to practitioners and areas without private veterinary service.

Herd health programs attempt to develop and maintain livestock herds of high health standards through regular inspections, laboratory examinations and professional advice.

Livestock medicines sold through general stores, feedmills and other lay outlets are subject to regulations which are administered by Field Services. Other responsibilities include the preparation of animal health regulations, Emergency Measures Organization, fur farming, investigation of industrial accidents and pollution where animal health is affected, and co-operation with other departments and governments in programs concerning livestock diseases.

SHARED SERVICES

All laboratories require certain basic services that are common to all. This is the function of the shared services section which will initially provide for media preparation, store rooms, duplicating machines, delivery service, and co-ordination of continuing education facilities. Future plans for shared services include purchasing, storage and distribution of supplies, library, TWX, mail sorting and metering and photographic services.

The savings from sharing services was one of the main reasons for consolidating all these laboratory facilities in one building. Most of the laboratories were reaching a point where they would have had to move to larger facilities and all these services would have had to be provided for each.

One of the most important shared services in the future will be the library, which is the foundation of any scientific service. Consolidation of these laboratories in one building will enable a larger library covering more subject matter areas. It reflects the increasing emphasis on the multi-disciplinary approach to research and the production of safe wholesome food.

SOIL MECHANICS AND CONCRETE LABORATORY

This is where overburden soil and bedrock samples are tested to evaluate foundation conditions and fill requirements for stability, compressibility and suitability as foundation and construction materials for water control structures. Large quantities of high quality durable concrete are required for dams, spillways, outlet works and canal tunnels. The concrete laboratory was provided to test the suitability of aggregate from different sources for construction of concrete structures.

A few years ago the Department of Agriculture announced the P.R.I.M.E. program — a program to evaluate the present and future water requirements within the province and means of storing or diverting water to areas within the province where there is a shortage of water. Such a system will require a system of dams, canals and tunnels. Before costs and feasibility of diversion structures can be determined, subsurface investigation and laboratory analysis are required.

All of these tests will be needed in this development program to provide water for irrigation, power, recreation, conservation, water quality and pollution control, flood and erosion control and industrial, municipal and domestic uses.

DAIRY AND FOOD LABORATORY

The purpose of the laboratory is to assist food producers and processors and to protect the consumer by ensuring that dairy products and other foods meet the standards established by federal, provincial and civic authorities. Food samples are collected from retail outlets, processing plants and producers and are checked for microbiological quality, chemical composition and presence of illegal toxic and non-toxic substances such as antibiotics, pesticide residues, preservatives, sanitizers and added water in milk.

Numerous other specimens like feed, wildlife, water, soil and animal and human tissues are analyzed for pesticide residues. The laboratory also is actively engaged in the development of new techniques for pesticide residue detection, and in the modification and application of some procedures for routine use in quality control laboratories.

Other services include analysis of milk supplies for radioactive isotopes, surveys of the incidence of Q-fever in milk and as a consulting service to food industries and government agencies concerning composition of foods, plant and retail outlet sanitation and related problems.

TOXICOLOGY LABORATORY
PROVINCIAL ANALYST

This is the main governmental chemical analytical laboratory in the province. It provides services in four distinct areas: human and veterinary toxicology, environmental health control, forensic chemistry and industrial quality control.

Human and veterinary toxicology involves the detection, identification and determination of poisonous materials in human and animal tissues and body fluids. Specimens from live patients and post mortem cases, submitted by hospitals, coroners, veterinarians and police forces are analyzed to aid diagnosis and cure, or determine cause of death. The Provincial Analyst issues certificate of analysis for court proceedings in the province.

The most important service in the area of environmental health control provided by this laboratory is the chemical analysis of drinking water. Food and feed samples are also analyzed for toxic substances.

Forensic analyses are performed for local police forces and R.C.M.P. to aid criminal investigation. These encompass a broad spectrum of complex chemical and physico-chemical analyses, using sophisticated instruments. Tests range from blood alcohol determination and detection of LSD in pills, to the identification of dust particles and explosives. Chemical analyses are also performed in connection with civil lawsuits.

Industrial quality control is done for the Alberta Liquor Control Board and other departments of the Government. All alcoholic beverages are regularly tested and breweries and wineries in the province are inspected to meet specifications.

Analysis of various materials for local industry is also carried out on a limited basis.

HOME ECONOMICS LABORATORY

Home economists plan to test products under home conditions to provide reliable consumer information about food, nutrition housing, clothing, textiles and home management. The laboratory will deal with the specific concerns of homemakers through applied research. For example, the laboratory contains an abrasion machine to test the durability of materials for clothing, floor coverings and so on.

The laboratory will also co-operate in the further use and testing of Alberta agricultural products. Varieties of vegetables will be checked for their suitability for home preserving and new methods of food processing will be tested. This work also provides the opportunity for developing illustrative material and factual information for home economics extension programs.

The laboratory is designed to illustrate applied design principles in home planning, furnishings and equipment.

FISH AND WILDLIFE LABORATORY

The office and laboratory facilities of the Fish and Wildlife Division of the Department of Lands and Forests support fisheries and wildlife research.

The wildlife research section examines the factors that affect the production, survival and growth of wildlife species in the province. Research studies include the influence of behavior, nutrition, weather, habitat, predation, disease, parasites and pesticides on wildlife populations.

The fisheries research section works in two major fields: basic biological research on fish species and water pollution research relevant to the survival and welfare of fish populations.

Special projects in wildlife consist of studies to assess the capability of lands to support big game ungulate populations. Special fisheries projects include studies to determine the capability of waters to produce sport fish and biological surveys of waters in the northern areas of the province. Sport fish and big game ungulate capability studies are part of the provincial contribution to the Canada Land Inventory Program.

AGRICULTURAL SOIL AND FEED TESTING LABORATORY

The soil and feed testing services offer some of the most effective links between research and the farm by providing answers to problems on individual farms.

Soils vary greatly in their ability to supply plant nutrients and support growth. Soil analysis provides an inventory of soil nutrients and other fertility factors. With these analyses farmers can select the proper fertilizers, crops and management for their farms.

The quality of farm feeds is affected by their composition, weather, harvest and storage conditions. Feed analysis helps farmers to estimate the nutritive value of home-grown feeds and how these feeds can be used most effectively in livestock feeding programs. Analyses also point to deficiencies in home-grown feed supplies and the need for adding supplements.

The laboratory is also involved in the development of improved techniques for diagnosis and utilization of farm soil and feeds.

CROP CLINIC

Four diagnostic fields are incorporated in the services offered by the Crop Clinic. The bulk of plant and animal specimens received are channelled through provincial and municipal agricultural extension offices. Others are forwarded to the clinic by veterinarians in private practice, by staff of provincial vocational agriculture colleges, by commercial nurserymen and greenhouse operators, and by plant inspectors.

The plant pathology section offers diagnosis and control recommendations for plant abnormalities caused by fungi, bacteria, viruses and nonparasitic agencies such as drought, winterkill and soil problems.

The entomology section advises clients regarding plant problems caused by insects, mites and other tiny animal pests. Specialized advice and guidance are provided to persons involved in insect control programs. The value of beneficial insects is recognized when recommending control of harmful species.

(Continued)

Crop Clinic
(CONTINUED):

The zoology section investigates, identifies and makes recommendations concerning problems arising from depredations of troublesome bird and animal pests. The botany section identifies all classes of plants ranging from microscopic algae, mushrooms and other fungi, up to higher forms such as grasses, trees and shrubs. Many of the plants brought in for identification are suspected of carrying poisonous substances.

Many specimens are neither harmful nor weeds, so control recommendations are formulated considering the need to protect useful species of plants. Mounted specimens are prepared and distributed to field staff for extension purposes.

Notes